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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies.	)	ET Docket No. 92-9
	)	RM-7981
	)	RM-8004

To: The Commission

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DEC 1 1 1992

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

COMMENTS OF SR TELECOM, INC.
ON THE FURTHER NOTICE OF PROPOSED RULE MAKING

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Dated: December 11, 1992

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SUMMARY

The Commission's proposal to eliminate the 10.565-10.615/10.630-10.680 GHz ("10 GHz band") allocation from point-to-multipoint use in favor of private and common carrier fixed-microwave use, on a co-primary basis, is premature and ill advised.

SR Telecom opposes the Commission's 10 GHz allocation plan, which is designed to foster the migration of fixed-microwave facilities from the 2 GHz band in order to accommodate the vast realm of emerging technologies in the 2 GHz band with as little disruption to existing services as possible. Instead, SR Telecom urges the Commission to maintain the current 10 GHz allocation for point-to-multipoint services, since carriers will be able to satisfy the present demand for DEMS and DTS services with reliable low-cost equipment that will soon be available in the market place. Wide spread use of DEMS and DTS equipment was not previously practical due to high equipment costs, and it was these costs which apparently led many licensees to either surrender their licenses or not construct their systems. By maintaining the current 10 GHz allocation for DEMS and DTS, the Commission will be able to permit these services to take advantage of the technological advances over the past 10 years which, in much the same manner as the 900 MHz common carrier paging and wireless cable services, will stimulate the growth of point-to-multipoint services.

Should the Commission decline to preserve the 10 GHz allocation for point-to-multipoint use, it will dramatically delay implementation of DEMS and DTS services on a wide-spread basis. Because no equipment is currently available or under development for the 18 GHz band, SR Telecom submits that allocation of only the 18 GHz band for point-to-multipoint services could delay the implementation of service to the public for several more years. This would not serve the public interest, especially at a time when it is anticipated that reliable low-cost 10 GHz equipment will soon be available for sale in the market place. Further, for the same reasons that the 10 GHz band may prove unsuitable for 2 GHz licensees, the 18 GHz band may not be suitable for DEMS and DTS operations due to adverse propagation and rain attenuation considerations.

In order to avoid such a harsh result, SR Telecom proposes two less drastic alternatives: (1) allocation of Channels 1 through 4 and 11 through 14 in the 10 GHz band for point-to-multipoint use on an exclusive basis; Channels 5 through 10 and 15 through 24 to be allocated to the fixed microwave services on a co-primary basis with the point-to-multipoint services, or (2) allocation of the 10 GHz band for fixed-microwave and point-to-multipoint use on a co-primary basis, with a requirement that fixed-microwave applicants demonstrate that no other frequencies outside the 10 GHz band are available for the proposed systems. This

latter safeguard is necessary in order to prevent a single fixed-microwave path, which could have easily been accommodated in another band, from frustrating the planning and implementation of a portion of a DEMS/DTS system.

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To: The Commission

COMMENTS OF SR TELECOM, INC.

SR Telecom, Inc. ("SR Telecom") submits herewith, pursuant to Section 1.415 of the Commission's Rules, its comments in ET Docket No. 92-9, in response to the Federal Communications Commission's Further Notice of Proposed Rule Making in this docket, released September 4, 1992 (hereinafter referred to as the "Further Notice"). In support hereof, the following is shown:

I. Statement of Interest

1. SR Telecom is a leading manufacturer of time division multiple access ("TMDA") subscriber microwave radio systems, including point-to-multipoint equipment suitable for Digital Electronic Message Service ("DEMS") and Digital Termination System ("DTS") type services. This equipment currently is designed to operate primarily in the bands between 1.4 and 3 GHz, and is in use in approximately 70 countries worldwide. Because spectrum in the 1.4 to 3 GHz range is not currently allocated in the United States for

point-to-multipoint operations, SR Telecom has been working to adapt its equipment for use in the 10 GHz band. After substantial investment of time and resources in this project, SR Telecom is on the verge of completing development of spectrally efficient TMDA equipment for point-to-multipoint systems in the 10 GHz band. This effort has been based upon the allocation which the Commission established for this service approximately ten years ago.[1] This equipment will soon be available in the market place at reasonable costs. The TDMA equipment being developed is capable of providing digital voice and data services at a rate of 64 kbs (including high speed data and facsimile transfer, slow scan video, and other enhanced features), as well as providing integrated services digital network ("ISDN") services. SR Telecom is aware of a strong demand for such capabilities. It is respectfully submitted that the public interest would not be served, should the Commission adopt its proposal to eliminate the 10.565-10.615/10.630-10.680 GHz ("10 GHz band") allocation for private and common carrier point-to-multipoint use, since its newly developed 10 GHz point-to-multipoint equipment will thus not be available in the United States.

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[1] SR Telecom understands that some European manufacturers currently have 10 GHz point-to-multipoint equipment under development, with the intent for distribution in the United States. These efforts were likewise driven by the Commission's allocation of 10 GHz for point-to-multipoint services.

II. The Commission Should Preserve the Point-to-Multipoint Allocation in the 10 GHz band.

2. In its Further Notice, the Commission has proposed the reallocation of the 10 GHz band to permit co-primary private and common carrier fixed microwave use. Point-to-multipoint operations would not be permitted (except to the extent that existing systems would be grandfathered). While SR Telecom applauds the Commission's efforts to accommodate the vast realm of emerging technologies with as little disruption to existing services as possible, SR Telecom must oppose this proposal as premature and ill-advised. For the following reasons, the Commission should maintain the present 10 GHz allocation for point-to-multipoint DEMS and DTS-type systems:

A. 10 GHz Equipment Will Finally Be Available at Reasonable Cost.

3. SR Telecom is completing development of its 10 GHz point-to-multipoint microwave equipment and expects to have this equipment commercially available in the near future. This equipment will be vastly superior in terms of capabilities, services offered, and flexibility, in addition to being much less expensive than earlier DEMS/DTS equipment. Once this equipment is available in the market place at reasonable cost, SR Telecom will be able to satisfy the present demand for point-to-multipoint services which,

to date, has remained largely unmet due to the unreasonable expenses associated with the acquisition of reliable 10 GHz point-to-multipoint equipment. The high cost of reliable 10 GHz equipment has no doubt prevented many carriers from providing DEMS and DTS service in the 10 GHz band, as is evident from the vast number of authorizations which, over the years, were either cancelled at the licensee's request, or forfeited (as reflected in the Commission's unofficial DEMS database). These entities saw an opportunity to provide a needed service, as evidenced by their spending of the time and resources necessary to prepare, file and prosecute their application to grant.

4. As a result of equipment costs, despite the significant interest in the 10 GHz band for point-to-multipoint use, much of the 10 GHz band allocated to DEMS and DTS has remained unused. This is clearly a case where the technology needed to make the service a success did not become available on a cost-effective basis until well after the regulations for the service were established. Now that affordable equipment is about to become available, with the enhanced ISDN features needed to satisfy public demand, the Commission has proposed to take away the necessary frequencies for this service. SR Telecom submits that the advent of cost-effective equipment will stimulate the growth of DEMS and DTS such that the demand for point-to-multipoint spectrum in the 10 GHz band will increase substantially

beyond the approximately 20 carriers now licensed in the band today. (Further Notice at p. 9, n. 7). The proposed reallocation will, in essence, squander this development of technology, and force the DEMS industry to start all over at a less desireable band.

5. Other spectrum allocations demonstrate that new technologies can experience a slow growth cycle, despite public demand, where either cost effective equipment was not available in the market place or the regulatory environment was not conducive to the development of the radio service. Spectrum allocations for radio services, such as 900 MHz common carrier paging, Multi-Channel Distribution Service (MDS/MMDS) and Instructional Television Fixed Service (ITFS), were largely unused for several years after being allocated, but are now heavily used.

6. In 1982, the Commission allocated 37 channels in the 900 MHz band for provision of local paging service on a common carrier basis. See Rule Section 22.501(p). This allocation was made based on a finding of a pent-up demand for additional paging spectrum. First Report and Order, 89 FCC 2d 1337 (1982). However, until 900 MHz paging equipment became readily available at a reasonable cost, it was commonplace to see numerous license cancellations listed in the Commission's weekly Public Notices, as licensees found that they could not afford to construct their systems. Today, with the advent of less expensive equipment, the

weekly Public Notices reflect that most new common carrier paging systems are now licensed in the 900 MHz band, and these systems are constantly being expanded to provide valuable regional paging coverage. This long awaited use of the 900 MHz band resulted in a dramatic decrease in the amount of competitive filings and ensuing litigation before the Common Carrier Bureau's Mobile Services Division, since it is no longer necessary for carriers to fight over frequencies in the lower bands.

7. Likewise, in MDS and ITFS, the Commission has instituted regulatory changes which, after many years, made construction and operation cost-effective and thereby encouraged the growth of these services.[2] Indeed, wireless

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[2] In 1963, the Commission established the ITFS, in order to provide educational institutions with a means for instructional television. Twenty years later, the Commission acknowledged that the ITFS band was under utilized outside of urban areas, see Report and Order, 94 FCC 2d 1203, 1213-14 (1983), and carved eight channels out of the ITFS allocation to create the MMDS in order to provide MDS carriers with additional spectrum in providing wireless cable services. Because MMDS and ITFS spectrum continued to lay fallow, the Commission, in 1990, relaxed its rules further, to allow educational institutions to lease excess capacity to wireless cable providers under certain circumstances. The Commission also allowed applicants to combine the available channels, to facilitate a service that could compete with cable systems. In this way, the Commission was able to stimulate the growth of both the MMDS and the ITFS, in that sufficient channels were made available for programming to make wireless cable a profitable venture. And educational institutions, which might otherwise not have sought ITFS licenses, were now able to provide instructional television and recover some costs from the wireless cable providers. SR Telecom submits that the Commission should show the same nurturing consideration to the 10 GHz point-to-multipoint services as it did over the past thirty years to ITFS and MDS/MMDS, rather than

cable systems are being constructed all over the country, and the number of MMDS filings has increased to the point that the Commission had to impose a temporary freeze on filings so that it could process the applications it had received.

8. Had the Commission not had the foresight to promote these services, and instead, eliminated the frequency allocations under the theory that the spectrum allocated to them had gone unused for a significant period of time, the benefits to the public derived from 900 MHz paging, MDS/MMDS and ITFS would never have been realized. To take away the 10 GHz allocation for DEMS and DTS at this point will likewise stifle any further growth potential of the ISDN point-to-multipoint services which can be provided by DEMS/DTS systems. Indeed, digital technology is the underlying basis for most innovative narrowband technologies. Thus, by reallocating the 10 GHz band, the Commission will be thwarting technologies similar to those now being developed by carriers vying for emerging technologies licenses, which led to this docket.

9. SR Telecom respectfully submits that the Commission should preserve the 10 GHz allocation so that the DEMS and DTS services can be given an opportunity to

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summarily eliminating the point-to-multipoint service after only 10 years of development.

develop, now that inexpensive equipment is on the verge of entering the market place.

B. The Proposed Reallocation is Premature.

10. The Commission proposes to force the development of DEMS technology to start over again for the sake of clearing the 10 GHz band, to accommodate migrating 2 GHz point-to-point microwave licensees. However, it is not yet known whether the 10 GHz band will be needed by, or suitable for such licensees. As noted in the comments of Communications Transmission, Inc. ("CTI"), emerging technologies may not displace existing 2 GHz licensees in many parts of the country for years to come, if ever. See Further Notice at para 15. And, as shown by commentors in response to the initial Notice of Proposed Rule Making in this docket, spectrum above 2 GHz will not be a suitable substitute for many rural microwave operations, because the propagation characteristics of higher frequency bands require shorter distances between points of communication. In rural areas, especially where there is rugged terrain, it may not be possible to establish intermediate sites, thereby necessitating the use of long microwave paths. See Comments of National Telephone Cooperative Association at 4; Rocky Mountain Telecommunications Association at 5. Therefore, it is respectfully submitted that the Commission should wait to determine whether there is sufficient demand for the other

reallocated bands (4 GHz, 6 GHz, 11 GHz, and 18 GHz) by migrating 2 GHz licensees before reallocating the 10 GHz band as well.

C. The Commission Has Made No Provision for Point-to Multipoint Services in the Private Operational Fixed-Microwave Service.

11. The Commission's proposal to eliminate the 10 GHz allocation for private and common carrier point-to-multipoint services will leave private carriers without any option to provide new service in the future. SR Telecom respectfully submits that the Commission should retain the present allocation for 10 GHz authorized under Part 94 of its Rules so that private carriers will be able to provide DTS services to the public. A continued allocation for private carriers is in the public interest in order to spur competition with the common carrier services.

D. Low Cost Point-to-Multipoint 18 GHz Equipment Has Not been Developed.

12. SR Telecom is unaware of any efforts in the industry to develop reliable, inexpensive 18 GHz TMDA equipment. Because no equipment has been developed and is apparently not currently under development, there will be a further delay of at least several more years, in bringing point-to-multipoint services to the public on a large scale. In order to develop reliable 18 GHz equipment for point-to-multipoint use, equipment manufacturers, such as SR Telecom,

will have to overcome engineering hurdles regarding frequency stability requirements for TDMA, which SR Telecom believes may be impractical at 18 GHz. This is especially true since frequency stability is more critical for burst-mode point-to-multipoint TDMA systems than for conventional point-to-point systems.

13. Because it will be more difficult to perfect 18 GHz equipment, SR Telecom expects the equipment to be much more expensive than comparable equipment for 10 GHz. Furthermore, due to propagation differences, additional transmitters are required at 18 GHz to provide service comparable to that at 10 GHz to serve the same area. As a result, fewer carriers will be able to make the investment necessary to construct and operate an 18 GHz DEMS or DTS system. SR Telecom can only surmise that NEC and LDD, two companies which were developing equipment for DEMS and DTS in the 1980's, abandoned the development of this equipment in the 18 GHz band due to concerns that reliable low-cost equipment could not be produced and brought into the market place.

14. Indeed, for some of the same reasons that the 10 GHz band may prove unsuitable for 2 GHz licensees, the 18 GHz band may not be suitable for DEMS/DTS operations. The increase in free space loss at 18 GHz compared with 10 Ghz is 5.1 dB for similar propagation paths. Rain attenuation

is also increased significantly at 18 GHz as indicated by the table below for paths of 5, 10 and 20 miles:[3]

Rain Type	Rain Intensity	Path Distance	Rain Attenuation 10 GHz	18 GHz
moderate	0.16 in/hr	5.0 mi	0.4 dB	2.2 dB
		10.0 mi	0.8 dB	4.4 dB
		20.0 mi	1.6 dB	8.8 dB
heavy	0.64 in/hr	5.0 mi	2.4 dB	9.3 dB
		10.0 mi	4.8 dB	18.6 dB
		20.0 mi	9.6 dB	37.2 dB

15. Because of the reduced signal propagation characteristics, the omnidirectional nodes will service approximately half the distance at 18 GHz as accomplished at 10 GHz for the similar degree of service reliability for the two systems. Therefore, an equally reliable 18 GHz point-to-multipoint DEMS system must be designed with three to four times as many nodes as a 10 GHz DEMS/DTS system in order to achieve a similar service reliability. This may once again push the costs for DEMS/DTS beyond affordability.

III. If the Commission Proceeds With the Proposed Reallocation Plan, it Should Use a Less Drastic Alternative.

16. If the Commission determines that it must make the 10 GHz band available to accommodate fixed-microwave services displaced from the 2 GHz band, it should adopt a

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[3] From Engineering Consideration For Microwave Communications Systems, 4th Edition, 1991, by AG Communications Systems, Figure 18.

reallocation plan, which will ensure sufficient spectrum for fixed-microwave systems to migrate into the 10 GHz band as necessary, while retaining an allocation in the 10 GHz band for point-to-multipoint services. At least two such less drastic alternatives exist:

A. The Commission Should Allocate Channels 1 through 4 and Channels 11 through 14 for 10 GHz Point-to-Multipoint Services on an Exclusive Basis.

17. If the Commission does not retain the current 10 GHz allocation for DEMS and DTS use, it should, at the very least, preserve at least part of the existing allocation by leaving Channels 1 through 4 for point-to-multipoint use and Channels 11 through 14 for internodal communications for DTS systems.[4] The remaining frequencies (Channels 5 through 10 and 15 through 24) may then be allocated to the fixed microwave services, preferably on a co-primary basis with the point-to-multipoint services. A similar scheme should be adopted under Part 94.

18. A separate allocation for DEMS and DTS in the 10 GHz band is necessary in order to ensure that point-to-multipoint services can be provided to the public on a competitive, cost efficient basis in each Metropolitan Statistical Area ("MSA"). The allocation of Channels 1 through 4 for point-to-multipoint use and Channels 11 through 14 for internodal communications will provide

[4] The specific frequencies for the currently allocated DEMS channels are set forth in Rule Section 21.502.

sufficient spectrum to make possible a competitive market place in each MSA in which DEMS and DTS systems may be licensed. The exclusive allocation will minimize start-up costs so that DEMS and DTS licensees will not be forced to immediately license and construct an entire system in order to avoid the possibility that a co-primary fixed microwave system, which is also licensed on a portion of the channel, may prevent future expansion as the demand for service grows. Instead, the licensee would be able to construct its core system and then expand its system at a reasonable pace, as dictated by the needs of the users in its service area, thereby spreading its construction costs over a longer period of time.

B. Alternatively, the Commission Should Allocate the 10 GHz Band for Fixed Microwave and Point-to-Multipoint Use on a Co-primary Basis.

19. If the Commission is unwilling to allocate a portion of the 10 GHz band for DEMS and DTS use on an exclusive basis, SR Telecom submits that the Commission should make any allocation in the 10 GHz band for fixed microwave use on a co-primary basis with the DEMS and DTS services. However, in order to reduce the possibility of harmful interference between fixed microwave users and DEMS and DTS services, and to avoid inefficient spectrum use, SR Telecom recommends that the Commission adopt certain safeguards. In particular, the Commission should require fixed microwave applicants who desire to use this band to

make an affirmative showing that no other suitable frequencies outside the 10 GHz band are available for their proposed systems. In this way, the likelihood that a fixed microwave system will prevent the expansion or establishment of a DEMS or DTS system within a licensed MSA is greatly reduced.

20. In the absence of this safeguard, there is a danger that the planning and implementation of a substantial portion of a DEMS/DTS system could be frustrated by a proposal for a single, short point-to-point microwave path that could have been accommodated in another band.

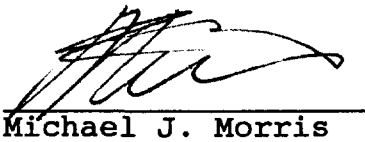
IV. Conclusion

21. The Commission's proposal to reallocate spectrum in order to accommodate the emerging technologies is a step in the right direction. However, the proposed elimination of a 10 GHz allocation for point-to-multipoint services is ill advised with the introduction of inexpensive reliable 10 GHz equipment close at hand, and the inherent delay if 18 GHz equipment must be developed. Moreover, the evidence of record does not show that a reallocation of the 10 GHz band is either necessary or desireable.

Accordingly, SR Telecom urges the Commission to preserve the 10 GHz allocation for point-to-multipoint private and common carrier services. In the alternative, if the Commission proceeds with the reallocation of the 10 GHz band as proposed, SR Telecom requests that the Commission adopt one of the less drastic alternatives described above.*

Respectfully submitted,

SR TELECOM, INC.

By: 

Michael J. Morris
Vice President

Dated: December 11, 1992

*A copy of these Comments is being mailed to the parties listed on the attachment hereto.

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